

CERTIFICATE

(1) EU-Type Examination

(2) **Equipment or protective systems intended for use in potentially explosive atmospheres - Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number: **KEMA 10ATEX0093 X** Issue Number: **11**

(4) Product: **Level Transmitter Levelflex FMP50, OFMP50, FMP51, OFMP51, FMP52, OFMP52, FMP53, OFMP53, FMP54, OFMP54, FMP55, OFMP 55, FMP56, OFMP56, FMP57 and OFMP57**

(5) Manufacturer: **Endress+Hauser SE+Co. KG**

(6) Address: **Hauptstrasse 1, 79689 Maulburg, Germany**

(7) This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) DEKRA Certification B.V., Notified Body number 0344 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential test report number NL/KEM/ExTR10.0055/11.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0 : 2018
EN 60079-11 : 2012

EN 60079-1 : 2014
EN 60079-26 : 2015

EN 60079-7 : 2015 + A1 : 2018
EN 60079-31 : 2014

except in respect of those requirements listed at item 18 of the Schedule.

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12) The marking of the product shall include the following:



II 1 G	Ex ia IIC T6...T1 Ga or
II 1/2 G	Ex ia IIC T6...T1 Ga/Gb or
	Ex ia/db [ia Ga] IIC T6...T1 Ga/Gb or
II 1/2/3 G	Ex ia/ic [ia Ga] IIC T6...T1 Ga/Gb/Gc or
	Ex ia/ec [ia Ga] IIC T6...T1 Ga/Gb/Gc or
II 1 D	Ex ia IIIC T_{200XX} °C Da or Ex ta IIIC T_{200XX} °C Da or
II 1/2 D	Ex ia IIIC Txx °C Da/Db or Ex ta/tb IIIC Txx °C Da/Db

Date of certification: 16 February 2022
DEKRA Certification B.V.

R. Schuller
Certification Manager



® Integral publication of this certificate and adjoining reports is allowed. This Certificate may only be reproduced in its entirety and without any change.

(13) **SCHEDULE**

(14) **to EU-Type Examination Certificate KEMA 10ATEX0093 X**

Issue No. 11

(15) **Description**

Level Transmitters Levelflex FMP50, OFMP50, FMP51, OFMP51, FMP52, OFMP52, FMP53, OFMP53, FMP54, OFMP54, FMP55, OFMP55, FMP56, OFMP56, FMP57 and OFMP57 are used for the measurement of the level of liquid or solid materials on basis of the Time of Flight (ToF) method.

Level Transmitters Levelflex FMP55 and OFMP55 additionally measure the interlayer between two different liquids by additionally using the capacitance of the probe.

The transmitter consists of an electronics enclosure and an integral rope or rod probe.

Depending on the interface applied, the probe measurement signal is converted into an electrical output signal.

See Annex 1 for detailed information on all possible variations and options and the applicable electrical data.

Ambient temperature range -50 °C to +80 °C.

See Annex 1 for detailed information on the relation between ambient temperature and process temperature and temperature class and maximum surface temperature.

Electrical data

See Annex 1 for the electrical data.

Installation instructions

The instructions provided with the product shall be followed in detail to assure safe operation.

(16) **Report Number**

No. NL/KEM/ExTR10.0055/11.

(17) **Specific conditions of use**

Depending on the configuration and the application of the equipment, specific conditions of use may apply, e.g. regarding electrostatic discharge or external protective devices. For details, refer to the equipment specific Safety Instructions.

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at item (9).

(19) **Test documentation**

As listed in Report No. NL/KEM/ExTR10.0055/11.

(13) **SCHEDULE**

(14) **to EU-Type Examination Certificate KEMA 10ATEX0093 X**

Issue No. 11

(20) **Certificate history**

Issue 1 - 213683800	initial certificate
Issue 2 - 214074800	extension of the model range
Issue 3 - 215283400	extension of the model range
Issue 4 - 216161200	extension of the model range and standards update
Issue 5 - 216373000	constructional changes
Issue 6 - 218210500	change of T _a
Issue 7 - 219883700	constructional changes and standards update
Issue 8 - 222238700	extension of the model range
Issue 9 - 223617000	extension of the model range and constructional changes
Issue 10 - 224947300	constructional changes and standards change
Issue 11 - 226279800	evaluation to EN 60079-7 and editorial changes, versions with Approval Codes "BK, IK, *K" removed from scope

BESCHEINIGUNG

(1) EU-Baumusterprüfung

(2) Geräte oder Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen – Richtlinie 2014/34/EU

(3) EU-Baumusterprüfbescheinigung Nummer: KEMA 10ATEX0093 X Ausgabe Nr.: 11

(4) Produkt: Füllstandsmesswertumformer Levelflex FMP50, OFMP50, FMP51, OFMP51, FMP52, OFMP52, FMP53, OFMP53, FMP54, OFMP54, FMP55, OFMP 55, FMP56, OFMP56, FMP57 und OFMP57

(5) Hersteller: Endress+Hauser SE+Co. KG

(6) Anschrift: Hauptstraße 1, 79689 Maulburg, Deutschland

(7) Dieses Produkt sowie die verschiedenen zulässigen Ausführungen ist in der Anlage zu dieser EU-Baumusterprüfbescheinigung und in den zugehörigen Unterlagen festgelegt.

(8) DEKRA Certification B.V. bescheinigt als benannte Stelle Nr. 0344 nach Artikel 17 der Richtlinie 2014/34/EU des Europäischen Parlaments und des Rates vom 26. Februar 2014, für dieses Produkt die Erfüllung der wesentlichen Sicherheits- und Gesundheitsanforderungen für den Entwurf und den Bau von Produkten zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen gemäß Anhang II der Richtlinie.

Die Ergebnisse der Prüfung sind im vertraulichen Prüfbericht Nr. NL/KEM/ExTR10.0055/11 festgelegt worden.

(9) Die wesentlichen Sicherheits- und Gesundheitsanforderungen werden erfüllt durch Übereinstimmung mit:

EN IEC 60079-0 : 2018
EN 60079-11 : 2012

EN 60079-1 : 2014
EN 60079-26 : 2015

EN 60079-7 : 2015 + A1 : 2018
EN 60079-31 : 2014

außer in Bezug auf die in Punkt 18 der Anlage dargelegten Anforderungen.

(10) Falls das Zeichen "X" hinter der Bescheinigungsnummer steht, wird auf besondere Bedingungen für die Anwendung des Produkts in der Anlage zu dieser Bescheinigung hingewiesen.

(11) Diese EU-Baumusterprüfbescheinigung bezieht sich nur auf den Entwurf und den Bau des spezifizierten Produkts. Weitere Anforderungen der Richtlinie gelten für das Herstellungsverfahren und die Lieferung dieses Produkts. Diese sind von vorliegender Bescheinigung nicht abgedeckt.

(12) Die Kennzeichnung des Produkts umfasst Folgendes:



II 1 G	Ex ia IIC T6...T1 Ga oder
II 1/2 G	Ex ia IIC T6...T1 Ga/Gb oder
	Ex ia/db [ia Ga] IIC T6...T1 Ga/Gb oder
II 1/2/3 G	Ex ia/ic [ia Ga] IIC T6...T1 Ga/Gb/Gc oder
	Ex ia/ec [ia Ga] IIC T6...T1 Ga/Gb/Gc oder
II 1 D	Ex ia IIIC T _{200xx} °C Da oder Ex ta IIIC T _{200xx} °C Da oder
II 1/2 D	Ex ia IIIC Txx °C Da/Db oder Ex ta/tb IIIC Txx °C Da/Db

Datum der Bescheinigung: 16. Februar 2022

DEKRA Certification B.V.

R. Schuller
Certification Manager



® Integrale Veröffentlichung dieser Bescheinigung und zugehörigen Prüfberichte ist erlaubt. Diese Bescheinigung darf nur ungekürzt und unverändert vervielfältigt werden.

(13) **ANLAGE**

(14) **zur EU-Baumusterprüfbescheinigung KEMA 10ATEX0093 X** Ausgabe Nr. 11

(15) **Beschreibung**

Füllstandsmesswertumformer Levelflex FMP50, OFMP50, FMP51, OFMP51, FMP52, OFMP52, FMP53, OFMP53, FMP54, OFMP54, FMP55, OFMP55, FMP56, OFMP56, FMP57 und OFMP57 für die Füllstandsmessung von Flüssigkeiten oder Feststoffen auf Basis der Time of Flight (ToF) Methode.

Füllstandsmesswertumformer Levelflex FMP55 und OFMP55 messen durch benutzen der Sondenkapazität zusätzlich die Trennungslage zwischen zwei verschiedenen Flüssigkeiten.

Der Messwertumformer besteht aus einem Elektronikgehäuse und einer integralen Seil- oder Stabsonde.

Abhängig der verwendeten Schnittstelle wird das Sondenmesssignal in ein elektrisches Ausgangssignal umgeformt.

Siehe Anhang 1 für detaillierte Informationen bezüglich aller möglichen Variationen und Optionen und der zutreffenden elektrischen Daten.

Umgebungstemperaturbereich -50 °C bis +80 °C.

Siehe Anhang 1 für detaillierte Informationen bezüglich der Beziehung zwischen Umgebungstemperatur und Prozesstemperatur und Temperaturklasse und maximaler Oberflächentemperatur.

Elektrische Daten

Siehe Anhang 1 für die elektrischen Daten.

Errichtungshinweise

Die Betriebsanleitung des Herstellers ist genau zu befolgen um einen sicheren Betrieb zu gewährleisten.

(16) **Prüfbericht Nummer**

Nr. NL/KEM/EXTR10.0055/11

(17) **Besondere Bedingungen**

Abhängig der Konfiguration und der Anwendung der Betriebsmittel können besondere Bedingungen zutreffend sein, z.B. wegen elektrostatischer Entladung oder externen Schutzeinrichtungen. Siehe für Einzelheiten die gerätespezifischen Sicherheitshinweise.

(18) **Wesentliche Sicherheits- und Gesundheitsanforderungen**

Von den Normen unter (9) abgedeckt.

(13) **ANLAGE**

(14) **zur EU-Baumusterprüfbescheinigung KEMA 10ATEX0093 X** Ausgabe Nr. 11

(19) **Prüfungsunterlagen**

Wie erwähnt in Prüfbericht Nr. NL/KEM/ExTR10.0055/11.

(20) **Bescheinigungsübersicht**

Ausgabe Nr. 1 - 213683800	Erstbescheinigung
Ausgabe Nr. 2 - 214074800	Erweiterung der Modeltypen
Ausgabe Nr. 3 - 215283400	Erweiterung der Modeltypen
Ausgabe Nr. 4 - 216161200	Erweiterung der Modeltypen und Normenänderung
Ausgabe Nr. 5 - 216373000	Änderung der Konstruktion
Ausgabe Nr. 6 - 218210500	Änderung der T _a
Ausgabe Nr. 7 - 219883700	Änderung der Konstruktion und Normenänderung
Ausgabe Nr. 8 - 222238700	Erweiterung der Modeltypen
Ausgabe Nr. 9 - 223617000	Erweiterung der Modeltypen und Änderung der Konstruktion
Ausgabe Nr. 10 - 224947300	Änderung der Konstruktion und Normenänderung
Ausgabe Nr. 11 - 226279800	Beurteilung nach EN 60079-7 und redaktionelle Änderungen, Modeltypen mit Approval Codes "BK, IK, *K" gelöscht

**Annex 1 to Certificate of Conformity IECEx KEM 10.0043X
to EU-Type Examination Certificate KEMA 10ATEX0093X, issue 11
to IECEx Test Report NL/KEM/ExTR10.0055/11**

Equipment

Guided Radar Level Transmitters Levelflex FMP5x and OFMP5x, for the measurement of the level of liquid or solid materials on basis of the Time of Flight (ToF) method.

Type designation

Levelflex, code FMP5x-aabcdeffgghh**+# and OFMP5x-aabcdeffgghh**+#

x	=	Probe type			
		0, 1, 2, 3, 4, 5, 6 or 7			
aa	=	Approval code			
		IECEX	ATEX	ATEX	IECEX / ATEX
		IA, KA, *A	BA	= II 1 G	Ex ia IIC T6...T1 Ga
		8B	8B	= II 1 G	Ex ia IIC T6...T1 Ga
		IB, KB, *B	BB	= II 1/2 G	Ex ia IIC T6...T1 Ga/Gb
		8C	8C	= II 1/2 G	Ex ia IIC T6...T1 Ga/Gb
		IC, KC, *C	BC	= II 1/2 G	Ex ia/db [ia Ga] IIC T6...T1 Ga/Gb
		ID, KD, *D	BD	= II 1/2/3 G	Ex ia/ic [ia Ga] IIC T6...T1 Ga/Gb/Gc
		IG, KG, *G		=	Ex ec IIC T6...T1 Gc ¹⁾
		IH, KH, *H		=	Ex ic IIC T6...T1 Gc ¹⁾
		IL, KL, *L	BL	= II 1/2/3 G	Ex ia/ec [ia Ga] IIC T6...T1 Ga/Gb/Gc
		I2, K2, *2	B2	= II 1/2 G	Ex ia IIC T6...T1 Ga/Gb
				= II 1/2 D	Ex ia IIIC Txx °C Da/Db
		I3, K3, *3	B3	= II 1/2 G	Ex ia/db [ia Ga] IIC T6...T1 Ga/Gb
				= II 1/2 D	Ex ta/tb IIIC Txx °C Da/Db ¹⁾
		I4, K4, *4	B4	= II 1/2 G	Ex ia IIC T6...T1 Ga/Gb, Ex ia/db [ia Ga] IIC T6...T1 Ga/Gb ²⁾
		IE, KE, *E	BE	= II 1 D	Ex ta IIIC T ₂₀₀ xx °C Da ¹⁾
		IF, KF, *F	BF	= II 1/2 D	Ex ta/tb IIIC Txx °C Da/Db ¹⁾
b	=	I/O - interface			
		A	=	2-wire; 4 - 20 mA HART	
		B	=	2-wire; 4 - 20 mA HART + PFS (status output)	
		C	=	2-wire; 4 - 20 mA HART + 4 - 20 mA	
		E	=	2-wire; Foundation fieldbus, PFS (status output)	
		G	=	2-wire; Profibus PA, PFS (status output)	
		K ³⁾	=	4-wire; 90 - 253 Vac, 4 - 20 mA HART	
		L ³⁾	=	4-wire; 10.4 - 48 Vdc, 4 - 20 mA HART	
		Y	=	Special version, not safety relevant	
c	=	Display, operation			
		A	=	No display	
		C, E	=	Internal display	
		L, M, N	=	Provision for connection of external display	
		Y	=	Special version, not safety relevant	
d	=	Enclosure			
		any single number or letter			
e	=	Cable gland			
		any single number or letter			
ff	=	Probe specification			
		any double numbers or letters.			
gg	=	Seal			
		any double numbers or letters			

**Annex 1 to Certificate of Conformity IECEx KEM 10.0043X
to EU-Type Examination Certificate KEMA 10ATEX0093X, issue 11
to IECEx Test Report NL/KEM/ExTR10.0055/11**

hhh	=	Process connection any triple numbers or letters
**+#	=	Options + additional options, not relevant for safety any combination of numbers and letters, except JN and/or NF, as listed below: Test, Certificate
JN		Ambient temperature transmitter -50 °C
		Accessory Mounted
NF		Bluetooth

Notes to Type Designation table:

NOTE 1:

Marking for versions of transmitters with option c = L or M or N

approval code aa =	IECEX	ATEX	ATEX	IECEX / ATEX
	IE, KE, *E	BE	II 1 D	Ex ta [ia Da] IIIC T ₂₀₀ xx °C Da
	IF, KF, *F	BF	II 1/2 D	Ex ta/tb [ia Da] IIIC Txx °C Da/Db
	IG, KG, *G			Ex ec [ia Ga] IIC T6...T1 Gc ^{a)}
	IH, KH, *H			Ex ic [ia Ga] IIC T6...T1 Gc ^{b)}
	I3, K3, *3	B3	II 1/2 G	Ex ia/db [ia Ga] IIC T6 Ga/Gb
			II 1/2 D	Ex ta/tb [ia Da] IIIC Txx °C Da/Db
				a) only with option b = B, C, E, G, K or L
				b) only with option b = B, C, E or G

NOTE 2:

Multiple marking; type of protection selected at first installation must be indicated and may not be changed.

NOTE 3:

Pos 3 (I/O - interface) options L and K are excluded for approval code IE and BE.

NOTE 4:

Properties described in the documentation on IECEx approval codes apply to the same extent to the corresponding K* approval code.

Thermal data

Ambient temperature at the electronics enclosure -50 °C to +80 °C.

The process temperature range, depending on the probe specifications and the relation between ambient temperature, process temperature and temperature class and maximum surface temperature T respectively T₂₀₀ for the different models of Level Transmitters Levelflex FMP5x and OFMP5x is listed in the safety instructions, provided with the equipment.

Where EPL Da is involved but no dust layer depth (e.g. T₂₀₀) is indicated, this is to be understood that only the probe which has no electrical connections, may be installed in an area requiring EPL Da.

That part may be installed in any dust layer depth because no significant heating can occur here.

Electrical data

I/O Interface

The codes of the type(s) of protection in the following table only relate to the electrical data of the I/O Interface and may differ from the codes as listed for the approval code in the Type Designation table.

**Annex 1 to Certificate of Conformity IECEx KEM 10.0043X
to EU-Type Examination Certificate KEMA 10ATEX0093X, issue 11
to IECEx Test Report NL/KEM/ExTR10.0055/11**

Intrinsically safe versions					
Approval Code	I/O Interface		Type of protection	Electrical data/maximum values	
	Code	Mode (functional)		Supply/output (terminals 1 and 2)	Supply/output (terminals 3 and 4)
BA, BB, B2, IA, *A, IB, *B, I2, *2, 8B, 8C	A	4 ... 20 mA HART	Ex ia IIC/IIIC	$U_i = 30 \text{ V}$; $I_i = 300 \text{ mA}$; $P_i = 1 \text{ W}$; $C_i = 12 \text{ nF}$; $L_i = 0 \text{ mH}$	non-existent
IH, *H			Ex ic IIC	$U_i = 35 \text{ V}$; $I_i = \text{N/A } ^1$; $P_i = \text{N/A}$; $C_i = 12 \text{ nF}$; $L_i = 0 \text{ mH}$	non-existent
For application / certificates which need IO-module with galvanic separation <u>and</u> use of 4...20mA HART in 1 channel mode (switch terminals closed) :					
B4, I4, *4	A	4 ... 20 mA HART	Ex ia IIC	$U_i = 30 \text{ V}$; $I_i = 300 \text{ mA}$; $P_i = 1 \text{ W}$; $C_i = 5 \text{ nF}$; $L_i = 0 \text{ mH}$	Not used
BD, ID, *D IH, *H			Ex ic IIC	$U_i = 35 \text{ V}$; $I_i = \text{N/A } ^1$; $P_i = \text{N/A}$; $C_i = 5 \text{ nF}$; $L_i = 0 \text{ mH}$	Not used
BA, BB, BK, B2, B4, IA, *A, IB, *B, IK, I2, *2, I4, *4, 8B, 8C	B	4 ... 20 mA HART+ PFS	Ex ia IIC/IIIC	$U_i = 30 \text{ V}$; $I_i = 300 \text{ mA}$; $P_i = 1 \text{ W}$; $C_i = 5 \text{ nF}$; $L_i = 0 \text{ mH}$	$U_i = 30 \text{ V}$; $I_i = 300 \text{ mA}$; $P_i = 0.7 \text{ W}/0.85 \text{ W}/1 \text{ W } ^2$; $C_i = 6 \text{ nF}$; $L_i = 0 \text{ mH}$
BD, ID, *D, IH, *H			Ex ic IIC	$U_i = 35 \text{ V}$; $I_i = \text{N/A } ^1$; $P_i = 0.7 \text{ W}/0.85 \text{ W}/1 \text{ W } ^2$; $C_i = 6 \text{ nF}$; $L_i = 0 \text{ mH}$	
BA, BB, B2 B4, IA, *A, IB, *B, I2, *2, I4, *4, 8B, 8C	C	4 ... 20 mA HART + 4 ... 20 mA	Ex ia IIC/IIIC	$U_i = 30 \text{ V}$; $I_i = 300 \text{ mA}$; $P_i = 1 \text{ W}$; $C_i = 30 \text{ nF}$; $L_i = 0 \text{ mH}$	$U_i = 30 \text{ V}$; $I_i = 300 \text{ mA}$; $P_i = 1 \text{ W}$; $C_i = 30 \text{ nF}$; $L_i = 0 \text{ mH}$
BD, ID, *D, IH, *H			Ex ic IIC	$U_i = 30 \text{ V}$; $I_i = \text{N/A } ^1$; $P_i = \text{N/A}$; $C_i = 30 \text{ nF}$; $L_i = 0 \text{ mH}$	$U_i = 30 \text{ V}$; $I_i = \text{N/A } ^1$; $P_i = \text{N/A}$; $C_i = 30 \text{ nF}$; $L_i = 0 \text{ mH}$
BA, BB, B2 B4, IA, *A, IB, *B, I2, *2, I4, *4	G, E	Profibus PA + PFS Foundation Fieldbus + PFS	Ex ia IIC/IIIC	FISCO with $U_i = 17,5 \text{ V}$; $I_i = 550 \text{ mA}$; $P_i = 5,5 \text{ W}$; $C_i = 5 \text{ nF}$; $L_i = 10 \mu\text{H}$ or $U_i = 30 \text{ V}$; $I_i = 300 \text{ mA}$; $P_i = 1.2 \text{ W}$; $C_i = 5 \text{ nF}$; $L_i = 10 \mu\text{H}$	$U_i = 30 \text{ V}$; $I_i = 300 \text{ mA}$; $P_i = 1 \text{ W}$; $C_i = 6 \text{ nF}$; $L_i = 0 \text{ mH}$
BD, ID, *D, IH, *H		Profibus PA + PFS Foundation Fieldbus + PFS	Ex ic IIC	FISCO with $U_i = 17,5 \text{ V}$; $I_i = \text{N/A } ^1$; $P_i = \text{N/A}$; $C_i = 5 \text{ nF}$; $L_i = 10 \mu\text{H}$ or $U_i = 32 \text{ V}$; $I_i = \text{N/A } ^1$; $P_i = \text{N/A}$; $C_i = 5 \text{ nF}$; $L_i = 10 \mu\text{H}$	$U_i = 35 \text{ V}$; $I_i = 300 \text{ mA}$; $P_i = 0.7 \text{ W}/0.85 \text{ W}/1 \text{ W } ^2$; $C_i = 6 \text{ nF}$; $L_i = 0 \text{ mH}$

**Annex 1 to Certificate of Conformity IECEx KEM 10.0043X
to EU-Type Examination Certificate KEMA 10ATEX0093X, issue 11
to IECEx Test Report NL/KEM/ExTR10.0055/11**

Non-intrinsically safe versions

Approval Code	I/O Interface		Type of protection	Electrical data/maximum values	
	Code	Mode (functional)		Supply/output (terminals 1 and 2)	Supply/output (terminals 3 and 4)
BC, B3, B4, IC, *C, I3, *3, I4, *4	A	4 ... 20 mA HART	Ex db IIC	$U_N = 35 \text{ V}^{4)}$ $I_{\max} = 22 \text{ mA}$ $P_N = 0.7 \text{ W}$ $U_m = 250 \text{ Vac}$	---
BE, IE, *E			Ex ta IIIC ³⁾		
BF, B3, IF, *F, I3, *3			Ex tb IIIC ³⁾		
BL, IG, *G, IL, *L			Ex ec IIC		
BC, B3, B4, IC, *C, I3, *3, I4, *4	B	4 ... 20 mA HART+ PFS	Ex db IIC	$U_N = 35 \text{ V}^{4)}$ $I_{\max} = 22 \text{ mA}$ $P_N = 0.7 \text{ W}$ $U_m = 250 \text{ Vac}$	$U_N = 35 \text{ V}^{4)}$ $P_N = 0.7 \text{ W}$ $U_m = 250 \text{ Vac}$
BE, IE, *E			Ex ta IIIC ³⁾		
BF, B3, IF, *F, I3, *3			Ex tb IIIC ³⁾		
BL, IG, *G, IL, *L			Ex ec IIC		
BC, B3, B4, IC, *C, I3, *3, I4, *4	C	4 ... 20 mA HART + 4 ... 20 mA	Ex db IIC	$U_N = 10.4 \dots 30 \text{ V}^{4)}$ $I_{\max} = 22 \text{ mA}$ $P_N = 0.7 \text{ W}$ $U_m = 250 \text{ Vac}$	$U_N = 10.4 \dots 30 \text{ V}^{4)}$ $I_{\max} = 22 \text{ mA}$ $P_N = 0.7 \text{ W}$ $U_m = 250 \text{ Vac}$
BE, IE, *E			Ex ta IIIC ³⁾		
BF, B3, IF, *F, I3, *3			Ex tb IIIC ³⁾		
BL, IG, *G, IL, *L			Ex ec IIC		
BC, B3, B4, IC, *C, I3, *3, I4, *4	G, E	Profibus PA + PFS Foundation Fieldbus + PFS	Ex db IIC	$U_N = 9 \dots 32 \text{ Vdc}^{4)}$ $P_N = 880 \text{ mW}$ $U_m = 250 \text{ Vac}$	$U_N = 10.4 \dots 35 \text{ V}^{4)}$ $P_N = 0.7 \text{ W}/0.85 \text{ W}/1 \text{ W}^{2)}$ $U_m = 250 \text{ Vac}$
BE, IE, *E			Ex ta IIIC ³⁾		
BF, B3, IF, *F, I3, *3			Ex tb IIIC ³⁾		
BL, IG, *G, IL, *L			Ex ec IIC		
BC, B3, IC, *C, I3, *3	K	4-wire ac, 4 - 20 mA HART	Ex db IIC	$90 \dots 253 \text{ Vac}^{4)}$ $50/60 \text{ Hz}$ $U_m = 250 \text{ Vac}$ $I_{\max} = 160 \text{ mA};$ $P_N = 1540 \text{ mW}$	$U_N = 22 \text{ V}^{4)}$ $I_{\max} = 22 \text{ mA}$ $U_m = 250 \text{ Vac}$
BF, B3, IF, *F, I3, *3			Ex tb IIIC ³⁾		
IG, *G			Ex ec IIC		
BC, B3, IC, *C, I3, *3	L	4-wire dc, 4 - 20 mA HART	Ex db IIC	$10.4 \dots 48 \text{ Vdc}^{4)}$ $U_m = 250 \text{ Vac}$ $I_{\max} = 300 \text{ mA};$ $P_N = 1328 \text{ mW}$	$U_N = 22 \text{ V}^{4)}$ $I_{\max} = 22 \text{ mA}$ $U_m = 250 \text{ Vac}$
BF, B3, IF, *F, I3, *3			Ex tb IIIC ³⁾		
IG, *G			Ex ec IIC		

- Notes: 1) Current controlled output, $I_N \leq 25 \text{ mA}$
2) Different values of P_i or P_N resulting in different surface temperature values (refer to thermal data)
3) if used as replacement for devices certified according to EN/IEC60079-31 ed. 1 or preceding standards the values stated applies for Ex ta, also.
4) specifies maximum value, which includes 10% safety margin for typical power line variations

**Annex 1 to Certificate of Conformity IECEx KEM 10.0043X
to EU-Type Examination Certificate KEMA 10ATEX0093X, issue 11
to IECEx Test Report NL/KEM/ExTR10.0055/11**

Service connector, equivalent to connector X500 / service interface (CDI)

The type of protection of the service connector, which is intended for connection to Endress+Hauser Service Interface FXA291 or any other interface, depends on the Approval code of the equipment.

If used as interface in type of protection intrinsic safety Ex ia IIC/IIIC, the following maximum values apply:

$U_o = 7.3 \text{ V}$; $I_o = 100 \text{ mA}$; $P_o = 160 \text{ mW}$; $U_i = 7.3 \text{ V}$; $C_i = 0 \text{ nF}$; $L_i = 0 \text{ mH}$.

If used as non-intrinsically safe interface, $U_N = 6.5 \text{ V}$

External display connector, equivalent to X900/X901 / interface for display

The type of protection of the external display connector depends on the Approval code of the equipment.

For transmitters prepared for connection of the external display of Endress+Hauser, Type FHX50, or any other suitable display in type of protection intrinsic safety Ex ia IIC/IIIC, the following maximum values apply:

$U_o = 7.3 \text{ V}$; $I_o = 157 \text{ mA}$; $P_o = 362 \text{ mW}$; $C_o = 388 \text{ nF}$; $L_o = 149 \text{ }\mu\text{H}$;

maximum allowed cable capacitance $C_c = 125 \text{ nF}$; maximum allowed cable inductance $L_c = 149 \text{ }\mu\text{H}$.

In other cases, if used as interface in type of protection intrinsic safety Ex ia IIC/IIIC, the following maximum values apply:

$U_o = 7.3 \text{ V}$; $I_o = 327 \text{ mA}$; $P_o = 800 \text{ mW}$; $U_i = 7.3 \text{ V}$; $C_i = 0 \text{ nF}$; $L_i = 0 \text{ mH}$.

If used as non-intrinsically safe interface, $U_N = 6.5 \text{ V}$.